

## REMARKS

Claims 1-20 are pending and were rejected. Claims 3, 4, 7, 8, 10, 12, 13, 14, 17, 18, and 20 have been amended herein. No claims have been cancelled. Reconsideration of all rejected claims is requested.

### I. Objection to the Drawings

Figs. 1-4 were rejected because they do not include legends stating that they are prior art. Although the applicants disagree with the objection, they have amended the Figs. 1-3 in order to expedite prosecution. Fig. 4 cannot be considered to be prior art. The office action does not cite any references directed to the art disclosed in Fig. 4. Should this objection be maintained, the applicants request that references be cited showing how Fig. 4 is prior art. Therefore, the objection to the drawings has been overcome.

### II. Rejection of claims 1-12 and 14-19 Under 35 U.S.C. §102(e)

Claims 1-12 and 14-19 were rejected under 35 U.S.C. §102(e) as being anticipated by the Yu publication, entitled, "Computational Models of Transmission Line with Skin Effects and Dielectric Loss."

#### CLAIM 1

Claim 1 is restated as follows:

A method of modeling dielectric losses in a transmission line, the method comprising:

modeling a resistance, a self-inductance, and a self-capacitance for a line as a lumped element circuit having a first port and a second port, where a signal is received on the first port; and

**modeling a dielectric loss as a scattering matrix** connected to the second port.  
(emphasis added)

According to the office action, the element of "modeling a dielectric loss as a scattering matrix" is disclosed on page 778, left column of Yu.

The applicants note that the Yu reference does not include a page 778. The applicants believe that the office action likely meant page 108. In the event that the Examiner meant to base the rejection on another portion of Yu, the applicants request clarification in a subsequent and non-final office action.

The applicants have reviewed all of Yu, including page 108, and have not located any disclosure related to modeling a dielectric loss as a scattering matrix. With regard to page 108, Yu discloses several equations related to modeling dielectric loss, however, the use of a scattering matrix is not disclosed. In fact, the last paragraph of the section of Yu entitled, "Model of Dielectric Loss" states the following:

The model in this case is simply a parallel or serial connection of the one-ports shown in Fig. 1, which is not essential to the modeling process given below.

Thus, this section of Yu simply creates a connection to a port. As set forth above, there is no model represented by a scattering matrix connected to a port. Therefore, Yu cannot anticipate claim 1.

Based on the foregoing, the rejection of claim 1 has been overcome and the applicants request reconsideration of the rejection.

#### CLAIM 2-7

Claims 2-7 are dependent on claim 1 and are deemed allowable by way of their dependence and for other reasons. Therefore, the applicants request reconsideration of the rejections.

## CLAIM 8

Claim 8 is independent and is restated as follows:

A method for simulating a transmission line comprising;  
determining a resistance of a transmission line;  
determining a self-inductance of the line;  
determining a self-capacitance of the line;  
creating a computer model of the line as a schematic having first  
and second ports;  
modeling the resistance as a resistor in series with an inductor that  
represents the self-inductance;  
modeling the self-capacitance as a capacitor connected to the line;  
and  
**modeling a dielectric loss as a scattering matrix** connected to  
the second port, wherein the scattering matrix represents conductance of  
the transmission line across a band of frequencies.  
(emphasis added)

Claim 8 was rejected on many of the same grounds as claim 1. Therefore, the applicants incorporate the rebuttals to the rejection of claim 1 into this rebuttal. Claim 8 includes the element of "modeling a dielectric loss as a scattering matrix connected to the second port." As set forth above, Yu does not disclose any scattering matrix. Therefore, Yu cannot anticipate claim 8.

Based on the foregoing, the applicants contend that the rejection of claim 8 has been overcome and request reconsideration of the rejection.

## CLAIM 9-12

Claims 9-12 are dependent on claim 8 and are deemed allowable by way of their dependence and for other reasons. Therefore, the applicants request reconsideration of the rejections.

## CLAIM 14

Claim 14 is independent and is restated as follows:

A computer-readable medium having computer-executable instructions for performing a method for modeling transmission lines, the method comprising:

modeling a resistance, a self-inductance, and a self-capacitance for a transmission line as a lumped element circuit having a first and second port, where a signal is received on the first port; and

**modeling a dielectric loss as a scattering matrix** connected to the second port.  
(emphasis added)

Claim 14 was rejected on many of the same grounds as claim 1. Therefore, the applicants incorporate the rebuttals to the rejection of claim 1 into this rebuttal. Claim 14 includes the element of "modeling a dielectric loss as a scattering matrix connected to the second port." As set forth above, Yu does not disclose any scattering matrix. Therefore, Yu cannot anticipate claim 14.

Based on the foregoing, the applicants contend that the rejection of claim 14 has been overcome and request reconsideration of the rejection.

## CLAIM 15-19

Claims 15-19 are dependent on claim 14 and are deemed allowable by way of their dependence and for other reasons. Therefore, the applicants request reconsideration of the rejections.

**III. Rejection of claims 13 and 20 Under 35 U.S.C. §103(a)**

Claims 13 and 20 were rejected under 35 U.S.C. §103(a) as being unpatentable over Yu as applied to claims 8 and 14, and further in view of the Eo publication.

Claims 13 and 20 are dependent on allowable base claims and are deemed allowable by way of their dependence and for other reasons. Therefore, the applicants contend that the rejections have been overcome and request reconsideration.

In view of the above, all of the pending claims are now believed to be in condition for allowance and a notice to that effect is earnestly solicited.

Respectfully submitted,

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